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EXAMINER
VU, NGOC K

ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 01/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/882,487	CONNELLY, JAY H.
	Examiner	Art Unit
	Ngoc K. Vu	2611

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-56* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date 2/20/02, 12/9/02, 3/17/03

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-3, 5, 13, 14, 20-23, 26, 27, 32, 35, 36, 41, 44, 45, 50, 53 and 55 are rejected

under 35 U.S.C. 102(e) as being anticipated by Wu et al. (WO 01/15451 A1).

        Regarding **claim 1**, Wu discloses a method for generating an opportunistic broadcast

schedule, comprising:

        broadcasting meta-data (e.g., program guide information), to a plurality of client, the

meta-data including descriptions of a plurality of pieces of content, e.g., information of program,

that are in consideration for future broadcasts (see page 8, lines 1-5 and page 9, lines 2-6);

        receiving client feedback data from a client, the client feedback data comprising a client

interest level in at least a portion of the plurality of pieces of content (e.g., receiving request(s)

for a selected program from user(s) - see page 6, lines 23-32);

        determining a piece of content from among said plurality of pieces of content that is most

opportunistic for a next broadcast by aggregating the client feedback data (for example, the

requests are ranked based on demand and the ranking shows the most popular show first. That

is, the system determines a program from among the plurality of programs that is most

opportunistic for a next broadcast by aggregating the requests – see table 1 and last paragraph on page 12, page 13, lines 1-5); and

scheduling the piece of content that is determined to be most opportunistic to broadcast for a next broadcast (the rankings are used to schedule the transmissions of the segments. The highest ranking segments are shown first on demand streams. When these segments finish, the next highest ranking segments are show, and so on – see page, lines 1-5).

Regarding **claim 2**, Wu discloses that after the highest ranking segments are shown first and they finish, the next highest ranking segments are shown and so on. For example, the program "Russian News" is determined to be the most opportunistic for a first broadcast, then the program "BBC News – English Language Edition" will be scheduled next, and so on (see page 13, lines 1-4).

Regarding **claim 3**, Wu discloses that after the highest ranking segments are shown first and they finish, the next highest ranking segments are shown and so on. Any unscheduled requests can result in a message back to the client. The message could explain the inability to satisfy the request (see page 13, lines 1-4 and 11-21). Wu further discloses that the request are held for a period of time then the requested are ranked based on demand. After the period of time for holding and the deployment of the streams new requests will be received (see page 12, lines 12-32).

Regarding **claim 5**, Wu discloses adjusting the broadcast scheduling in consideration of business objectives, e.g., customers can pay to move their requests up in the rankings and/or paid shows are ranked higher than free shows (see pages 13-14, lines 31-1).

Regarding **claims 13 and 14**, Wu discloses that the requests comprise relative rankings data to relative levels of interest in at least two programs (e.g., Russian News, BBC News...), and wherein the program (e.g., Russian News) that is determined to be most opportunistic to

broadcast comprises is determined, at least in part, by aggregating the relative ranking data

(e.g., highest ranking). It is noted that after the highest ranking programs are shown first and

they finish, the next highest ranking programs are shown and so on (see table 1 and lines 19-22

on page 12; page 13, lines 1-4).

Regarding **claim 20**, Wu discloses broadcasting a broadcast schedule, e.g., menu or

program guide, prior to broadcasting the program that is determined to be the most

opportunistic for the next broadcast (see page 8, line 26 to page 9, line 5).

Regarding **claim 21**, Wu discloses that for each segment requested by the user, a

determination is made as to whether the segment is a broadcast segment or an on demand

segment. Broadcast segments are segments that have a predetermined time and stream

associated with the segments. For instance, the "ABC Evening News: World News" segment will

have a time and stream identifier associated with it, e.g., 5:30 PM PST to 5:35 PM PST, stream

"KGO 7". Wu further discloses a most opportunistic program, e.g., Russian News, is determined

and scheduled for a next broadcast for each segment (see page 10, line 23 to page 11, line 2;

page 13, lines 1-4).

Regarding **claim 22**, Wu discloses providing multimedia content for different

demographic groups (see page 14, lines 16-21).

Regarding **claim 23**, Wu discloses that depending on the system, the requests for

segments can be held for varying predetermined period (see page 12, lines 12-16).

Regarding **claim 26**, Wu discloses an apparatus comprising: a processor with circuitry

(e.g., computer 122 – see figure 1) to execute instruction, a communications interface (e.g.,

data channel 118 – see figure 1) coupled to the processor to receive data from clients (e.g.,

STB 102 – see figure 1), and a storage device (within computer 112) having sequences of

instructions (i.e., software) stored therein (see page 15, lines 8-13), which when executed by the

processor cause the apparatus to perform the operations corresponding the method as recited

in claim 1 (see claim 1 above).

Regarding **claim 27**, the interpretation for this claim is similar to interpretation for claim 2

above.

Regarding **claim 32**, the interpretation for this claim is similar to interpretation for claim

13 above.

Regarding **claim 35**, Wu discloses a machine-readable medium having a plurality of

machine-executable instructions (i.e., software - see page 15, lines 8-13) stored thereon, which

when executed by a machine cause the machine to perform operations corresponding the

method as recited in claim 1 (see claim 1 above).

Regarding **claim 36**, the interpretation for this claim is similar to interpretation for claim 2

above.

Regarding **claim 41**, the interpretation for this claim is similar to interpretation for claim

13 above.

Regarding **claim 44**, Wu discloses a system, comprising:

a broadcast server (e.g., stream source 112 – see figure 1);

a database server (e.g., computer 112 – see figure 1), linked in communication with the

broadcast server (source 112 – see figure 1); and

a plurality of client systems (e.g., a plurality of set top boxes 102 – see figure 1) linked in

communication with the broadcast server via a first communication link (e.g., 114 or 116 – see

figure 1) and linked in communication with the database server via a second communication link

(e.g., 118 – see figure 1);

wherein the broadcast server is programmed to broadcast meta-data (e.g., program

guide information), to the plurality of client systems, the meta-data including descriptions of a

plurality of pieces of content, e.g., information of program, that are in consideration for future

broadcasts (see page 8, lines 1-5 and page 9, lines 2-6; page 15, lines 8-13);

wherein each client system (e.g., STB 102) is programmed to generate feedback data,

the client feedback data comprising a client interest level in at least a portion of the plurality of

pieces of content based, in part, on the descriptions of such provided by the meta-data (e.g.,

request(s) for a selected program from user(s) based on the provided program guide

information - see page 6, lines 23-32; page 15, lines 8-13);

wherein at least a client system sends client feedback data to the database server (122)

via the second communication link (118) (see figure 1);

wherein the database server (122) is programmed to determine a piece of content from

among said plurality of pieces of content that is most opportunistic for a next broadcast by

aggregating the client feedback data (for example, the requests are ranked based on demand

and the ranking shows the most popular show first. That is, the system determines a program

from among the plurality of programs that is most opportunistic for a next broadcast by

aggregating the requests – see table 1 and last paragraph on page 12, page 13, lines 1-5; page

15, lines 8-13); and

wherein the database server (122) is programmed schedule the piece of content that is

determined to be most opportunistic to broadcast for a next broadcast (the rankings are used to

schedule the transmissions of the segments. The highest ranking segments are shown first on

demand streams. When these segments finish, the next highest ranking segments are show,

and so on – see page, lines 1-5; page 15, lines 8-13); and

wherein the broadcast system is further programmed to broadcast the piece of content

that is determined to be most opportunistic when bandwidth becomes available on the first

communication link (e.g., 116) (see page 13, lines 29-31 and figure 1).

Regarding **claim 45**, the interpretation for this claim is similar to interpretation for claim 2 above.

Regarding **claim 50**, the interpretation for this claim is similar to interpretation for claim 13 above.

Regarding **claim 53**, Wu discloses that the first communication link (e.g., 114 or 116) comprises a satellite broadcast link and the second communication link comprises a telecommunications link (see page 4, lines 7-24).

Regarding **claim 55**, Wu discloses that the first communication link (e.g., 114 or 116) comprises a satellite broadcast link and the second communication link comprises a computer network communications link (see page 4, lines 7-24; page 6, lines 23-32).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 25, 54 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (WO 01/15451 A1).

Regarding **claim 25**, Wu discloses broadcasting the program that is determined to be the most opportunistic for a next broadcast. Wu does not explicitly disclose broadcasting using statistical multiplexing. Official Notice is taken that utilizing statistical multiplexing mechanism to provide the advantage that channel allocation to be extremely dynamic, resulting in lower data transfer capacity and, the assigned capacity being brought into more efficient use is well known

in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Wu by utilizing statistical multiplexing mechanism to provide the advantage that channel allocation to be extremely dynamic, resulting in lower data transfer capacity and, the assigned capacity being brought into more efficient use.

Regarding **claims 54 and 56**, Wu discloses communication between the STB 112 and source 112 via cable or satellite link, and communication between the STB 112 and the computer 122 via cable, telephone, or satellite (see page 6, lines 23-32; page 4, lines 7-16).

Wu does not disclose bi-directional cable system link or computer network communications link. Official Notice is taken that a bi-directional cable connection or computer network communications link are well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Wu to have bi-directional cable system link or computer network communications link in order to enhance the system providing interactive services to clients.

5.   Claims 4, 28, 37 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (WO 01/15451 A1) in view of Katayama (US 6,349,321).

Regarding **claim 4**, Wu discloses that the requests are held for varying periods until a time and the requests are ranked (see page 12, lines12-20). Wu does not disclose ranking and recalculating after more requests are received. However, Katayama discloses that a higher priority task is received and the scheduler calculates the time for the tasks and could interrupt the preceding process with the new process. Katayama also discloses that the CPU receives a plurality of asynchronous tasks (see col. 5-6, lines 48-27; col. 6, lines 28-36). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Wu by recalculating upon receiving new requests as disclosed by Katayama in order to process newly requested higher priority requests first.

Regarding claims **28, 37 and 46,** the interpretation for these claims is similar to interpretation for claim 4 above.

6.   Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (WO 01/15451 A1) in view of Bertram et al. (US 20030103532 A1).

Regarding **claim 24,** Wu discloses broadcasting the program that is determined to be the most opportunistic for a next broadcast. Wu does not explicitly disclose broadcasting using post multiplex insertion of null data packets. However, Bertram discloses multiplexing the transport encoded content data with a plurality of null transport packets to provide place holder for the asset data transport packets, and replacing the null transport packets with asset data transport packets prior to transmitting the multiplexed transport stream to a set top box (see abstract and summary of the invention). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Wu by multiplexing the transport encoded content data with a plurality of null transport packets as disclosed by Bertram in order to provide space for inserting the asset data transport packets.

7.   Claims 6-12, 15-19, 29-31, 33, 34, 38-40, 42, 43, 47-49, 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (WO 01/15451 A1) in view of Herz (US 6,088,722 A).

Regarding **claim 6,** Wu discloses the client sends the feedback but does not explicitly disclose ratings data corresponding to respective pieces of content, and the piece of content that is determined to be most opportunistic to broadcast comprises a highest rated piece of content derived from an aggregation of the ratings data. However, Herz discloses the feedback from customers includes ratings data corresponding to program, e.g., preferred level for the characteristic of video program. For example, if the level of "action" in a section of the movie "First Blood" is assigned a value of 8, the customer may give 4-6 as his/her acceptance range.

The customer may state his/her disagreement with the rating of a characteristic in a video program and put forward his/her own rating for each characteristic in the program. The feedback from the customers regarding what characteristics they find most desirable in the broadcast shows (see col. 14, lines 17-20; col. 15, lines 63-66; col. 23, lines 22-24; col. 30, lines 26-38). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Wu by including ratings data corresponding to respective pieces of content from the customer feedback, and the program that is determined to be most opportunistic to broadcast comprises a highest rated program derived from an aggregation of the ratings data as disclosed by Herz in order to effectively provide the most desirable program to the customer.

Regarding **claim 7**, Wu as modified by Herz further discloses that a possible approach to scheduling is that for each program its top n most-preferred broadcast windows are determined from the average of the calculated objective values. The scheduler then uses some methods to find a solution in which the average objective value reaches reasonably high value, and in which the time slots are covered (see Herz: col. 23, lines 14-31).

Regarding **claim 8**, Wu as modified by Herz further discloses that if the level of "action" in a section of the movie "First Blood" is assigned a value of 8, the customer may give 4-6 as his/her acceptance range. The customer may state his/her disagreement with the rating of a characteristic in a video program and put forward his/her own rating for each characteristic in the program. The customer may state his/her disagreement with the rating of a characteristic in a video program and put forward his/her own rating for each characteristic in the program (see col. 14, lines 36-41; col. 15, lines 63-66).

Regarding **claim 9**, Wu as modified by Herz further discloses that the ratings data is automatically generated by the client systems based on data, e.g., user preferences or profile,

stored on the client systems that are indicative of content preferences of users of the client

systems (see Herz: col. 12, lines 31-48).

Regarding **claim 10**, Wu as modified by Herz further discloses that the customer may

state his/her disagreement with the rating of a characteristic in a video program and put forward

his/her own rating for each characteristic in the program. This provides a mechanism for

adjustment of the content profiles (see col. 15, lines 63-67).

Regarding **claim 11**, Wu as modified by Herz further discloses that if the level of "action"

in a section of the movie "First Blood" is assigned a value of 8, the customer may give 4-6 as

his/her acceptance range. The customer may state his/her disagreement with the rating of a

characteristic in a video program and put forward his/her own rating for each characteristic in

the program. The customer may state his/her disagreement with the rating of a characteristic in

a video program and put forward his/her own rating for each characteristic in the program (see

col. 14, lines 36-41; col. 15, lines 63-66). Herz further discloses that the ratings data is

automatically generated by the client systems based on data, e.g., user preferences or profile,

stored on the client systems that are indicative of content preferences of users of the client

systems (see Herz: col. 12, lines 31-48).

Regarding **claim 12**, Wu discloses that the meta-data, the program guide information, is

broadcast as a broadcast stream and includes a descriptor for each program comprising a set of

attributes and attribute values that are used to describe that program (see Wu: pages 10-11,

lines 28-2; pages 8-9, lines 30-5). Wu as modified by Herz further discloses the client system

provides ratings data correspond to a program in response to receiving the descriptor for the

program (see Herz: col. 46, lines 56-65).

Regarding **claim 15**, the interpretation for these claims is similar to interpretation for

claim 8 above.

Regarding **claim 16**, the interpretation for these claims is similar to interpretation for claim 9 above.

Regarding **claim 17**, the interpretation for these claims is similar to interpretation for claim 10 above.

Regarding **claims 18, 30, 33, 39, 42, 48 and 51**, interpretation for these claims is similar to interpretation for claim 11 above.

Regarding **claims 19, 31, 34, 40, 43, 49 and 52**, interpretation for these claims is similar to interpretation for claim 12 above.

Regarding **claims 29, 38 and 47**, interpretation for these claims is similar to interpretation for claim 6 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc K. Vu whose telephone number is 703-306-5976. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Grant can be reached on 703-305-4755. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ngoc K. Vu
Examiner
Art Unit 2611

January 14, 2005